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Vaccine Safety: Thimerosal in Vaccines

Except as noted in italics below, this information is abridged from the United States Centers for Disease Control and Prevention (CDC) websites

<http://www.cdc.gov/od/science/iso/concerns/thimerosal.htm> and <http://www.CDC.gov/autism>

Topics:

- What is thimerosal?
- Which vaccines contain thimerosal?
- Is it safe for children to receive vaccines that contain thimerosal?
- Does thimerosal cause autism?

What is thimerosal?

Thimerosal is a very effective preservative that has been used since the 1930s to prevent contamination in some multi-dose vials of vaccines (preservatives are not required for vaccines in single dose vials). There is no convincing evidence of harm caused by the low doses of thimerosal in vaccines, except for minor reactions like redness and swelling at the injection site.

Thimerosal, which contains a form mercury called ethyl mercury, is also found in other commonly-used items such as cosmetics, especially mascara, as well as in some eye drops and nasal sprays; see http://www.medscape.com/viewarticle/531026_3 and <http://www.dnr.state.wi.us/org/caer/cea/mercury/household/page1.htm> for more details.

For instance, the amount of mercury in a dose of thimerosal-containing flu vaccine is very small, 25 thousandths of a gram, or about 1/1000 of an ounce. This is less than the amount of mercury in a 6-ounce can of chunk white albacore tuna; see <http://www.pbs.org/now/science/mercuryinfish.html> for details.

Which vaccines contain thimerosal?

Today, most routinely recommended vaccines for children in the U.S do not contain thimerosal. Only a few vaccines, including injectable influenza, contain trace amounts of thimerosal. But more and more thimerosal-free influenza vaccines will become available as manufacturing capabilities are expanded.

Adult tetanus boosters and one type of meningococcal vaccine for adolescents also still have thimerosal. The amount of mercury in a dose of these vaccines, 25 micrograms, is the same small amount as in thimerosal-containing flu vaccine; see <http://www.vaccinesafety.edu/thi-table.htm> for details.

Is it safe for children to receive vaccines that contain thimerosal?

Yes. There is no convincing evidence of harm caused by the small amount of thimerosal in vaccines, except for minor effects like swelling and redness at the injection site due to sensitivity to thimerosal.

Most importantly, all other routine childhood vaccines (such as Hepatitis B, Hib, and DTaP) are now thimerosal-free. Based on guidelines established by the FDA, the Environmental Protection Agency (EPA) and the Agency for Toxic Substances and Disease Registry (ATSDR), no child will receive excessive mercury from childhood vaccines, regardless of whether or not their shot contains thimerosal as a preservative.

Does thimerosal cause autism?

No. Autism Spectrum Disorders (ASD) or commonly referred to as autism “are a group of developmental disabilities defined by significant impairments in social interaction and communication and the presence of unusual behaviors and interests. ASD begins before the age of 3 and lasts throughout a person's life. It occurs in all racial, ethnic, and socioeconomic groups and is four times more likely to occur in boys than girls” (Centers for Disease Control and Prevention (CDC), Autism Spectrum Disorders Overview, 2007). The causes of ASD are not fully known. The relationship between ASD and thimerosal-containing vaccines was studied nationally and internationally for years. **According to these studies, there is no significant association between thimerosal-containing vaccines and ASD.** Furthermore, ASD rates continue to increase even after thimerosal was removed from the majority of vaccines worldwide. In 2007, the CDC released an official statement debunking the association between thimerosal-containing vaccines and ASD.

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